

ments, in the specification to clarify that the die includes stations A through I (although only stations A, B, C, H, and I are illustrated in Figure 2), and that the lamination discs or sections include discs 40a through 40i (although only sections 40a, 40b, 4c, 40h, and 40i are illustrated).

With reference to Figure 2, the station designated E and the disc designated 40e are errors. The designations should be, respectively, C and 40c, and a proposed drawing correction is attached hereto. It is requested that this proposed correction be approved, and the correction will be included in the formal drawings.

Appropriate changes are also being made in Claims 3, 4, and 12-17 in view of the Examiner's comments.

Reconsideration is requested of the rejection of Claims 1-3, 5-7, 9-14, 16, and 17 as being clearly anticipated by the patent to Archer. The Archer patent is directed to a solution for a problem arising from a camber or side-to-side curvature of a strip which is cut by a progressive die. The camber is illustrated in Figures 1 and 2 of the Archer patent, and the patent states that the die cuts openings 14 which enable a connecting neck to flex or bend. To correct the camber (i.e., to straighten the strip) shown in Figures 1 and 2, it is believed that the portion of the neck 14 below (as seen in Figure 3) the pilot guide holes 20 would have to stretch and/or the portion of the neck 14 above the holes 20 would have to compress.

With regard to the Applicant's invention, an important feature is the provision of means to accommodate progression or longitudinal dimensional discrepancies between the die stations and the disc sections of a lamination

strip. This problem is described in detail in the two paragraphs starting on line 25, page 1 of this application. When correcting for an error in progression, in an instance where two or more bridges are provided as shown in Figure 5, both bridges simultaneously deform in the same direction and in essentially the same manner to correct for the error. In other words, both bridges deform similarly to increase the center-to-center distance between adjacent discs or both deform similarly to decrease the center-to-center distance.

An important feature of this invention is that the bridges formed between adjacent discs are sufficiently narrow to be deformable to increase or decrease the center-to-center distance between adjacent discs. Another important feature is that the bridges are shaped to facilitate such deformation, and examples of shapes for this purpose are illustrated in Figures 5 and 6. As clearly illustrated in these two figures, each bridge has a length which is greater than the width of the slots 57 (or the distance between the edges of adjacent discs); in other words, each bridge has at least a portion which is out-of-parallel with the longitudinal center line of the strip. These shapes facilitate a change in the between-center distance of adjacent discs without buckling of the discs, because the deformation occurs substantially entirely at the bridges.

Another important feature is that two or more spaced apart narrow bridges are provided. In a die for cutting metal lamination discs for a motor as described in this application, the metal strip including the connected discs are pushed through the die from the feed end. A compromise must be made in the thinness of the connecting

bridges, because the bridges must be wide and strong enough to push the discs through the die stations without bending or buckling, and at the same time, the bridges must be thin and weak enough to enable them to deform when a discrepancy exists in the longitudinal dimensions. An example of suitable dimensions for the bridges is set out in the specification and the claims. In addition, by spacing the bridges on opposite sides of the strip center line, the pushing strength of the bridges is increased, as compared with a single bridge on or adjacent the center line. In the preferred embodiment shown in the drawings, initially four bridges connect the discs during the early die stations because a number of discs must be pushed. In later die stations, only two bridges connect the discs and they have adequate strength because fewer discs are required to be pushed.

With regard once again to the Archer patent, it should be noted that it refers to flexibility and bending at the "narrow neck." This patent does not suggest that the neck 16 allows a decrease or an increase in the center-to-center distance between adjacent discs, and it is believed that the neck 16 is unlikely to allow such a decrease or an increase because of the size of the neck and because it is not shaped (i.e., not angled) to facilitate a decrease or an increase. As a consequence, it is submitted that the method set out in the Archer patent would not solve the progression problem described on pages 1-2 of this application, whereas apparatus in accordance with Applicant's invention has proven to be an excellent solution to the problem.

With reference to the rejected Claims, Claim 1 recites apparatus for forming at least two deformable bridges which enable an increase or a decrease in the longitudinal distance between adjacent discs. The Archer patent shows a single neck and there is no disclosure that it is deformable to increase or decrease the distance between successive lamination blanks. Consequently, the subject matter of Claim 1 is structurally and functionally different from that of the Archer patent, and Claim 1 is patentable over the reference.

Claim 3 is dependent on Claim 1 and further recites slot cutting means which forms angle-shaped bridges which facilitate the deformation set out in Claim 1, and Claim 4 further specifies a chevron shape. As illustrated in Figures 5 and 6 of this application, the angle-shape facilitates deflection of the bridges. The neck 16 of Archer may be curved on both sides, but not such as to facilitate deformation, and the neck certainly is not chevron shaped as recited in Claim 4. Consequently, these two claims are also allowable over Archer.

Claim 5, and dependent Claims 6 to 11, recite a strip formed by adjacent discs which are connected by at least two narrow deformable bridges. The bridges are sufficiently narrow to enable deformation to increase or decrease the distance between adjacent discs. This feature is related to that discussed in connection with Claim 1 discussed above. Claims 6, 7, and 8 recite features having the previously discussed advantages, and Claims 9 to 11 recite further details which, in combination with the structure of

Claim 5, are novel and patentable. Thus, Claims 5 to 11 are also allowable over the Archer patent.

Claims 12 to 16 recite Applicant's process in accordance with this invention. As set out in independent Claim 12, at an initial station or stage, slots are cut across the strip to provide deformable bridges. At intermediate stages, pilot means engage pilot holes, and the bridges are deformed, when a dimensional adjustment is necessary, to allow the pins to engage the holes properly. The bridges deform to adjust the distances between adjacent pairs of discs, as recited in Claim 12. The Archer patent has no disclosure of an adjustment of the longitudinal distances between discs, and therefore this claim is not met by the Archer patent. Claim 13 sets out the step of engaging the sides of a disc at the initial station to orient the disc while cutting the slot(s) and the pilot holes. This is accomplished by the straddle pilots 52 shown in Figure 2 of this application. Claims 14 to 16 further recite the shape and locations of the bridges formed by the slots. These details also are not shown by the Archer patent.

Claim 17 recites apparatus including the die and a strip of material to be cut by the die. The claim sets out the distances between the stations of the die and the distances between the sections of the strip, and the deformable bridges for adjusting, when there is a dimensional discrepancy, the distances between adjacent sections. There is nothing comparable to this structure or function in the Archer patent which is directed to an adjustment for a camber problem, not to an adjustment for a progression or longitudinal error.

New claims 18 to 21 are dependent on the claims discussed above and therefore the above discussion also applies to them.

A number of new claims are being added to further define Applicant's invention over the prior art.

In view of the extensive revisions to the claims, and for the foregoing reasons, it is submitted that all of the claims are clearly and distinguishable from the Archer patent, and further, that the claimed subject matter is not obvious in view of the Archer patent. The Archer patent does not suggest Applicant's invention because the Archer process attempts to solve a camber problem, whereas Applicant is primarily concerned with a progression error problem, although it is believed that apparatus in accordance with Applicant's invention will also solve a camber problem if one exists. Thus it is believed that Applicant's apparatus will solve both progression and camber problems whereas the Archer patent purports to provide a solution only to a camber problem.

Further, Applicant's solution to the progression error problem was not obvious to those skilled in this art because this problem has plagued the electric motor manufacturing industry for many years, primarily in connection with shaping scroll or zig-zag strip material. A large amount of metal has been converted to scrap, and much production time has been lost because dimensional errors have prevented the metal from feeding properly through the dies. Applicant's invention was not an obvious modification of the prior art because the problem persisted in the industry for so many years, despite an awareness of the problem. Consequently,


the Examiner should resist the temptation to rely on hindsight which evaluating the merits of Applicant's invention. The Archer patent does not suggest Applicant's invention because, if it did, Applicant's invention would have been adopted by the industry many years ago.

It is therefore submitted that all of the claims are patentably distinguishable from the prior art and it is urged that all of the claims be allowed.

Respectfully submitted,

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